Department of Environmental Conservation
Response to Comments

For

Agrium Kenai Nitrogen Operations

APDES Permit No. AK0000507

Public Noticed October 31, 2016 – December 2, 2016

PROPOSED FINAL, 2017

Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

1 Introduction

1.1 Summary of Facility / Permit

The Agrium Kenai Nitrogen Operations (KNO) includes a nitrogen fertilizer manufacturing operations and export facility. The treated wastewater generated at KNO is proposed to be discharged to Cook Inlet at 60.67151211 North by 151.39174974 West. The average discharge volume is 0.870 million gallons per day. The Department has identified the following parameters as pollutants of concern: ammonia, organic nitrogen, temperature, oil & grease, total residual chlorine (TRC), pH, arsenic, copper, manganese, nickel, zinc, total aromatic hydrocarbons, total aqueous hydrocarbons, and whole effluent toxicity. The permit authorizes a chronic mixing zone for: ammonia, TRC, pH, temperature, and whole effluent toxicity. An acute mixing zone is authorized for ammonia and TRC.

1.2 Opportunities for Public Participation

The Alaska Department of Environmental Conservation (DEC or the Department) proposed to issue an Alaska Pollutant Discharge Elimination System (APDES) wastewater discharge permit to Agrium KNO. To ensure public, agency, and tribal notification and opportunities for participation the Department:

- identified the permit on the annual Permit Issuance Plan posted online at: http://www.dec.state.ak.us/water/wwdp/index.htm
- notified potentially affected tribes and local government(s) that the Department would be working on this permit via letter, fax and/or email
- posted a preliminary draft of the permit on-line for a 10-day applicant review on September 20, 2016, and notified tribes, local government(s), and other agencies
- formally published public notice of the draft permit on October 31, 2016 in the Kenai Peninsula Clarion and posted the public notice on the Department's public notice web page
- posted the proposed final permit on-line for a 5-day applicant review on May 12, 2017
- sent email notifications via the APDES Program List Serve when the preliminary draft, draft, and proposed final permits were available for review.

The Department received comments from two interested parties on the draft permit and supporting documents. The Department also requested comment from the Departments of Natural Resources Fish and Game, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the Environmental Protection Agency; however, no comments were received from these agencies on the draft permit.

This document summarizes the comments submitted and the justification for any action taken or not taken by DEC in response to the comments.

1.3 Final Permit

The final permit was adopted by the Department on pending. Changes are identified in the response to comments and reflected in the final fact sheet for the permit.

2 General Comments on the Permit

2.1 Comment Summary

The Department received comments from the Knik Tribal Council expressing concern that levels of nitrogen compounds will "increase in concentrations once the plant is reopened…The tribe is concerned that ecological receptors (birds, marine mammals, anadromous fish, shellfish, and invertebrates) would be exposed to increased levels of ammonia in the subtidal semi-confined aquifer seeps. The long-term effects of this discharge could also contribute to oceanic hypoxia at the discharge site making the area harmful to subsistence resources."

Response:

The Department has reviewed monitoring data collected from the facility during normal operations and has calculated effluent limits based on the performance data and State Water Quality Standards (WQS) for pollutant parameters that would ensure that uses of the waterbody are fully protected subject to permit compliance. The technology-based effluent limits calculated for ammonia and organic nitrogen have also decreased from the previous permit issuance. The Department finds the permit's terms and conditions are based on State WQS, which serve the very purpose of maintaining and protecting water quality and the aquatic life the water supports. No changes were made to the permit documents based on this comment.

3 Comments on the Fact Sheet

3.1 Comment Summary

KNO commented that language in Fact Sheet Section 3.0 was "confusing and makes no direct statement related to the section purpose." KNO indicated that items related to the facility's compliance identified in Fact Sheet Section 3.0 were not exclusions or non-compliance events with permit effluent limitations. KNO identified one instance where pH was erroneously reported due to a reporting error and attached reports that documented the error.

Response:

The Department concurs with the supporting documentation submitted by KNO and has revised the fact sheet accordingly.

4 Comments on Permit Conditions

4.1 Comment Summary

The Department received comments from the Knik Tribal council requesting "that corrective actions and best management practices plans be adopted to eliminate ongoing releases at the facility once it is reopened. Inspections, repairs, groundwater monitoring, operational controls for eliminating contaminant sources, and institutional controls should also be remedial measures included in the plan. Inspections should include isolation, hydrostatic testing, and visual inspections. Meeting marine water quality standards and reducing contamination concentrations throughout the site should be the primary goals for the plant facility."

Response:

The Department has included an extensive best management practices section in the permit that includes requirements to develop a best management practices plan that has to objective to prevent or minimize the generation and the potential for release of pollutants from the facility. Permit Section 2.2 further includes requirements for routine inspections, repairs, reporting, training, and a pollution prevention plan component. No changes were made to the permit documents based on this comment.

4.2 Comment Summary

The Department received comments from the Knik Tribal council recommending "that the groundwater remedial action plan be amended upon reopening of the plant to provide for active site remediation and treatment during operations through groundwater pumping and treatment, and groundwater air sparging. In addition, the tribe recommends that a feasibility study be conducted for the installation of a containment dam along the bank of the Cook Inlet along the plant site along with groundwater pumps for treatment of groundwater."

Response:

The Department, through the issuance of the permit requires that all wastewater discharged from the KNO facility comply with WQS and APDES regulations found in 18 AAC 70 and 18 AAC 83, respectively. Site remediation, including groundwater remediation, are regulated under separate state regulations at 18 AAC 75 and are not related to the APDES Program, and by extension, the proposed APDES permitting action. Therefore, the Department has not included requirements for site remediation and groundwater treatment in the APDES permit as any such requirements are administered by DEC's Contaminated Sites Program.

4.3 Comment Summary

KNO commented on Permit Section 1.5 and "requested a permit language modification that would not require first quarter sampling to be conducted if weather conditions are unsafe." KNO

also provided historical data collected regarding extreme weather events, tidal currents, and sea ice conditions in Cook Inlet to support their request.

Response:

The permit does not require sampling from a small watercraft, nor near the Agrium dock as stated in the submitted comment. Permit section 1.5.3 documents the establishment of receiving water monitoring station locations. The Department concurs with the supporting documentation submitted by KNO related to environmental conditions and worker safety during the first quarter of the calendar year.

A new section, 1.5.6, has been added with the following language to provide sampling flexibility to address safety concerns:

> "If documented environmental settings during the first quarter of the calendar year (January – March) prevent monitoring due to unsafe working conditions, two receiving water samples, spaced a minimum of four weeks apart, may be collected during the second quarter."

4.4 Comment Summary

KNO commented on permit section 1.5.11 claiming that "The permit language references the CORMIX model submitted with the 2M Mixing Zone Application, which was not the basis for the mixing zone calculations used to prepare the draft APDES Permit."

Response:

The Department used the CORMIX model submitted by KNO as the foundational basis for mixing zone sizing with only minor modifications. The Department used NOAA data collected at a nearby buoy for ambient currents. The Department revised the model from an unsteady state model to a steady modes that model the 10^{th} and 90^{th} percentile ambient currents consistent with mixing zone authorizations in other APDES permits and MixZon (the proprietors of CORMIX) verbal recommendations. No changes were made to the permit documents based on this comment.

4.5 Comment Summary

KNO commented that "individual requirements of Condition 1.5.11 are infeasible and inconsistent with State policy, Agrium requests they be removed from the Permit."

Response:

The Department has revised Permit Section 1.5 of the permit and references to this section in the fact sheet. Permit section 1.5.11 formerly referred to an "ambient mixing study." The authorized mixing zone size is driven by total residual chlorine (TRC). As such, the permit has been revised

as a logical outgrowth of the submitted comment, as follows. If the permittee installs and implements a dechlorination unit, the mixing zone dimensions will likewise be reduced due to reduced TRC concentrations being discharged and correspondingly less dilution from the receiving water is necessary to meet applicable water quality criteria; therefore, revisions were made to the permit language in sections 1.5.2, 1.5.13, and 2.2.7. Specifically, results from the TRC treatability study shall be submitted within one year of the effective date of the permit (section 2.2.7.2). If the permittee implements dechlorination as a result of the treatability study, receiving water monitoring will be kept the same as proposed in the draft permit (section 1.5.2) and a revised CORMIX mixing zone model and Form 2M will be required with the permit application for reissuance. Additionally, the permittee will be required to submit notification to DEC that dechlorination has been implemented and is operational. If the permittee does not recommend installing and implementing dechlorination and the Department agrees with the treatability report, ambient monitoring requirements for chlorine, ammonia, salinity, pH, and temperature will be increased to include ambient monitoring locations at the surface, mid-water, near bottom, and a minimum of ten monitoring locations would be required (Section 1.5.13). Quarterly sampling would be required at each location for three calendar years. In either case (i.e., dechlorination or no dechlorination), the draft permit language requirement for an ambient mixing study previously contained in section 1.5.11 has been removed from the permit, as well as associated discussion in the fact sheet.

4.6 Comment Summary

KNO commented that Permit Section 2.2.3.1.6 requires KNO to determine leakage of wastewater from holding ponds using influent, effluent, and evaporation estimates. “Based on the uncertainty associated with evaporation calculations, Agrium has requested this permit condition be removed…Agrium recommends using the current annual inspection and repair requirements listed in Condition II.A.5 of the current permit.”

Response:

The Department has removed Permit Section 2.2.3.1.6. However, the suggested replacement (Condition II.A.5 of the current permit) is the same language that KNO is requesting be removed. The Department assumed the KNO recommendation was actually referring to Condition II.A.4 (a – d) of the current permit, which is related to the “inspection and repair requirements.” The referenced language has been inserted in permit sections 2.2.3.1.5.1 through 2.3.1.5.4.

4.7 Comment Summary

KNO submitted a comment on Permit Section 1.5.1 noting that “Agrium notes this facility maintains an NPDES permit for storm water discharges and maintenance operations at times when the facility is idled. Agrium believes discharge operations have already commenced… Agrium recommends this condition be modified to state: ‘For purposes of receiving water

monitoring conducted under this permit, commencement of discharge operations shall be defined as occurring when the facility is actively producing ammonia and urea fertilizer."

Response:

The requested language change is within Permit Section 1.5 Receiving Water Monitoring. As this language pertains to the section it is under, DEC has determined that no change is necessary. Furthermore, the terminology is clearly defined in Permit Section 1.5.1 and is also referenced in Permit Section 1.3.1. Compliance with all requirements under the facility's storm water permit remains in effect and unchanged.

4.8 Comment Summary

KNO commented that Permit Sections 1.3.3 and 1.3.4.4 had incorrect values for the accelerated testing toxicity trigger of 625. KNO recommends the trigger be changed to 633 TUc to reflect the dilution in the chronic mixing zone.

Response:

The Department reviewed the calculation procedure and determined that no change is necessary. The calculation followed procedures commonly used to calculate the accelerated testing trigger used by other recently issued APDES permits. The calculation was as follows: 100/Critical dilution (0.16) = 625. If the Department were to revise the accelerated toxicity trigger to 633, the critical dilution would be required to change to 0.15797 (from 0.16%), which would be impractical to implement both as an enforceable condition of the permit and as a laboratory dilution. Furthermore, there is little apparent difference between toxicity occurring at 625 TUc and 633 TUc, and based on the facility's toxicity historical performance monitoring data, the Department has further determined there is no need to revise the accelerated testing trigger.